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mical journal that, on October 11, 1853, the idea first occurred to me "whilst out walking at Redhill," of taking advantage of the Sun's circularity in the manner which I afterwards adopted, and explained in the *Monthly Notices*, vol. xiv. p. 153, and vol. xv. p. 174. I quote the following from my published work, Preface, p. 2: "To carry out this plan, it was in the first place necessary to devise a new and more commodious method of observation than any hitherto adopted, and to lay altogether new foundations of method in recording, reducing, comparing, and discussing, for I unhesitatingly say that no observer would for any length of time have followed out any of the modes of observation previously practised."

Note on a Paper by Mr. Stone, "On the Rejection of Discordant Observations." By J. W. L. Glaisher, Esq.

Considering the tone of Mr. Stone's remarks in the *Monthly Notices* for November (vol. xxxiv. pp. 9–15), I felt myself justified in expressing with frankness what I thought with regard to his views and his criticisms on my own.

It was suggested to me that the paper containing these opinions—necessarily somewhat personal—should be withdrawn, and I was advised that the matter rest where it was, without further comment, a course which is, perhaps, the better. I have stated what my belief is in the *Monthly Notices* for April 1873 (vol. xxxiii. pp. 391–402); and have now only to ask the reader not to assume that I hold, because I offer no reply, all the opinions attributed to me by Mr. Stone, *e.g.* in reference to the investigation on pp. 14 and 15. I never held that the h of every observation was *à priori* equally likely to have any value from 0 to ∞, as I took the usual result as a first approximation. I will also ask any one who wishes to form an opinion on the subject in question to read Mr. Stone's paper in the *Supplementary Number* (vol. xxxiii. pp. 570–572), as well as that already referred to.

Second Paper on the probable Variability of some of the Red Stars in Schjellerup's List (Astronomische Nachrichten, No. 1591). By J. Birmingham, Esq.

(*Communicated by Mr. Dunkin.*)

At the last December meeting of the Society I had the honour of laying before it an account of the disappearance of No. 252 in the above Catalogue; and, while noticing certain pos-

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sible grounds of doubt respecting the reality of the original discovery of that star by Sir John Herschel, I argued against the probability of his making the double mistake of regarding Bessel's adjacent red star as a new one, and also assigning to it a wrong position. It was, therefore, with no little satisfaction that I saw by Mr. Chambers's paper read at the January meeting of the Society, that he observed the star in 1870, together with the neighbouring star, 251, and I have lately found that 252 was seen and spectroscopically examined by Secchi on July 17, 1868; so that it seems abundantly proved that 251 and 252 were distinct objects, and that the latter has recently disappeared.*

I would now direct attention to the probable variability of other stars in Schjellerup's list, which are now convenient for observation.

I first searched for No. 90, on February 3, 1873, and failed to find a red star in, or near its position. I was equally unsuccessful on February 6 and 8, on September 23, and December 26; and on December 28 I wrote to Messrs. Dunkin and Lynn, of the Royal Observatory, requesting that it might be looked for. This was accordingly done, and Mr. Downing, who made the observation with the Transit-circle, found, on January 3, that the exact position of 90 was occupied by a 7-magnitude colourless star without even a tinge of red. It was afterwards identified as one of Flamsteed's stars, 44 *Camelopardali*. This star, which I knew, appeared to me rather less than the 7th magnitude and of a bluish white colour. Schjellerup notes it as one of the stars in the Dorpat Catalogue, where it is rated at the 7th magnitude and marked *rubra*; so that it seems to be a variable at least in colour, if not in magnitude.

No. 101 is taken by Schjellerup from a note by Piazzi, who describes it as red, without stating the magnitude, and rather roughly gives its position as preceding by about 2′ another of his stars—No. 187—on the same parallel. I failed to find the red star on February 6, 1873, and was informed by Mr. Knott, to whom I communicated my failure, that he was equally unsuccessful on two previous occasions—on June 25 and August 3, 1866. However, on January 13 of the present year, I found a star in the position of 101, as well as I could identify it in a hurried observation. The passage of clouds did not permit me to examine it very closely, but it appeared about the 8·5 magnitude, and slightly tinged with red. I have not observed it since then; but I would suggest that it should be closely watched in

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* Professor Argelander remarks (*Astr. Nach.*, No. 1977) that this star was looked for at the Bonn Observatory on February 26, 1858, with the heliometer, and on November 18, 1859, with the meridian-circle, but on neither occasion was it visible. He is of opinion that there is some error in Sir John Herschel's observations; and Professor Schönfeld expresses the same view, suggesting that though Sir John speaks of "two observations," they may not have both included determinations of place. On the other hand, we have the observations of Mr. Chambers detailed in the January number of the *Monthly Notices*, p. 104. The point appears an interesting one.—[EDITOR.]

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its present excellent position for observation, when its very probable variability might be determined.

In No. 74 I have remarked differences within the limit of one magnitude, with considerable changes of colour: Schjellerup thus notes it—*Bessel*, *roth*, *Cape Obs.*, *vivid red*, 8.

My observations of it were as follow:—

1871, March 8.	Pale red, 8.
1872, Feb. 10.	Orange, 8.
1873, Feb. 2.	Orange, 7·5 to 8. A *comes* 9·5; intense blue; 285°.
1873, Dec. 20.	Fine orange red, 7.
1874, March 6.	Fine orange red, 7.

Recently, the angular distance of the comes was found to be 84″; position 288°.

No. 77, described by Schjellerup as *roth*, 7·7, seems less than 8, with the palest possible red tinge.

It may not be out of place here to refer to a very remarkable orange star which I found when looking for 77. On February 2, 1873, it appeared about the 7th magnitude, with a comes of the 11th; position 95°. On December 26 the large star seemed of the 6th magnitude. On February 3 it looked nearer the 5th, and on March 8, it appeared of the 6th magnitude again. Its roughly approximate place by equatoreal is R.A., $6^{h}\ 14^{m}\ 40^{s}$; Decl. − 2° 54′ 30″. Its small apparent changes may, indeed, be due to errors of estimation; but I consider it worth the attention of observers, as it is strikingly superior in depth of colour to very many of the stars in Schjellerup's Catalogue; and the fact that it was missed by previous observers of red and orange stars is strongly suggestive of variability. From recent measures, I find that the angular distance of the comes is 100″, and the position 99°.

No. 63, unless I mistake its identity, presents an instance of complete change of colour. It appears as one of Schjellerup's own stars in the list, where it is marked "*roth*," but to me it always shows a fine blue tint, while 51 *Orionis*, near it, is deeply orange.

No. 152, which is described in the Catalogue as a red star of 8·5 magnitude, has been observed by me on several occasions as a fine orange star of the 6th magnitude.

No. 280 furnishes an undoubted instance of change. It is catalogued as one of Argelander's stars of the 6th magnitude, and followed by a blue star on the same parallel. On April 18, 1873, I noted it as a good red, but no more than 7·5, and estimated the blue star at the 9th magnitude. On January 15, 1874, the red seemed only of the 8·5 magnitude, and it was considered even smaller by the Rev. Mr. Webb, on the 12th. On February 17, I thought the star had risen to the 7th magnitude, with a high colour; and, in an unfavourable observation

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near lower transit, on February 27, I estimated it at only the 8th magnitude. The small blue star near it seems always about the 9th magnitude, and affords a convenient object for comparison. I have just been informed that Secchi saw 280 of about the 8th magnitude, and suggested its variability, which may be regarded as certain; and it now remains to discover the period.

Notes on the Zodiacal Light. By the Rev. Samuel J. Johnson.

What Humboldt speaks of as the "mild pyramidally shaped zodiacal light, very visible to the unassisted eye," has been displayed here this winter with far more distinctness than I have noticed since February 21, 1870, when I witnessed a vivid appearance of the phenomenon from Lytham on the Lancashire coast.

It was conspicuous, amongst other nights, on February 8, when the impression that Tycho mistook the Light for the "abnormal vernal evening twilight," appeared at first sight almost pardonable.

February 16. Sky clear for a brief interval about 8 P.M. The conical figure very fairly defined, except at the apex, where the curvature was somewhat difficult to make out. *Mars* situated nearly on the axis; about which point, the Light seemed equal in brightness to that portion of the *Milky Way* that passes through *Cassiopeia*. Nearer the horizon, the intensity was decidedly greater, ν *Ceti* appeared just outside the cone of light; the head of *Aries* faintly involved in it. It could be traced, though with difficulty, 3° or 4° above the *Pleiades*.

February 18. Could readily be followed before the Moon set. Boundaries, so far as could be made out, the outline being indistinct, on the left θ, ν, μ *Ceti*, λ *Tauri*, then passing round the *Pleiades*, about which region the figure was very faint. On the other side 41 and α *Arietis* were just outside it. From this point the boundary line would have to be drawn through the 5th mag. stars ψ and τ *Pegasi* to the horizon. Clear extent at the base 30° to 35°. Not quite so brilliant as on the 16th. I fancied a slight reddish tinge in the brighter portions.

February 19. The Moon did not set till 9^{h} 14^{m}, when the more conspicuous parts had descended below the horizon.

An interval of moonlight nights followed.

March 6. The Zodiacal Light again conspicuous. In extent and general features unaltered; in intensity scarcely so great. The clearest defined portion lay between ν *Ceti* and γ *Arietis*: at lower altitudes, the Light, although brighter, appeared very much diffused. *Mars* about 5° left of the axis.

March 7. With regard to the earliest visibility of the Light,